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I hereby certify that the documents indicated below are being deposited with the United States Postal Service under 37 CFR 1.10 on the date indicated above and are addressed to Box Patent Application, Assistant Commissioner for Patents, Washington, D.C. 20231, and mailed on the above Date of Mailing with the above "Express Mail" mailing label number.	
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SIGNATURE of person mailing paper or fee	

**BOX PATENT APPLICATION  
ASSISTANT COMMISSIONER FOR PATENTS  
WASHINGTON, D.C. 20231**

DOCKET NUMBER: 12179-P081US

Sir.

Transmitted herewith for filing is the Patent Application of

Inventors: Marc Eller et al.

For SYSTEM AND METHOD FOR SELLING ADVERTISING SPACE ON ELECTRONIC BILLBOARDS OVER THE INTERNET

Enclosed are:

- Patent Specification and Declaration
- 6 sheets of drawing(s)
- An assignment of the invention to SI Diamond Technology, Inc. (includes Recordation Form Cover Sheet).
- A certified copy of a application.
- An associate power of attorney
- Information Disclosure Statement, PTO 1449 and copies of references.
- Verified Statement Claiming Small Entity Status

The filing fee has been calculated as shown below:

For	Number Filed	Number Extra	Rate Small Entity	Fee Small Entity
Basic Fee				\$ 345.00
Total Claims	26 - 20	6	x 9 =	\$ 54.00
Indep. Claims	5 - 3	2	x 39 =	\$ 78.00
<input type="checkbox"/> MULTIPLE DEPENDENT CLAIM(S) PRESENTED			+ 130 =	\$ - 0 -
			TOTAL	\$ 477.00

- Checks in the amount of \$477.00 (filing fee) and \$40.00 (assignment fee) are enclosed.
- The Assistant Commissioner is hereby authorized to charge payment of the following fees associated with this communication or credit any overpayment to Deposit Account No 23-2426 (12179-P081US). A duplicate copy of this sheet is enclosed.
  - Any additional filing fees required under 37 CFR §1.16
  - Any patent application processing fees under 37 CFR §1.17.

Respectfully submitted,

By \_\_\_\_\_

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Attorney's Docket  
No. 12179-P081US

Serial No:

Filed: (herewith)

Title: SYSTEM AND METHOD FOR SELLING ADVERTISING SPACE ON ELECTRONIC BILLBOARDS OVER THE INTERNET

**VERIFIED STATEMENT (DECLARATION) CLAIMING SMALL ENTITY STATUS  
(37 C.F.R. §§ 1.9(f) and 1.27(c)) -- SMALL BUSINESS CONCERN**

I hereby declare that I am

- the owner of the small business concern identified below:  
 an official of the small business concern empowered to act on behalf of the concern identified below:

Name of Small Business Concern: SI Diamond Technology, Inc.

Address of Small Business Concern: 3006 Longhorn Blvd., Suite 107, Austin, Texas 78758

I hereby declare that the above-identified small business concern qualifies as a small business concern, as defined in 13 C.F.R. § 121.12, and reproduced in 37 C.F.R. § 1.9(d), for purposes of paying reduced fees to the United States Patent and Trademark Office under Sections 41(a) and (b) of Title 35, United States Code, in that the number of employees of the concern, including those of its affiliates, does not exceed 500 persons. For purposes of this statement, (1) the number of employees of the business concern is the average over the previous fiscal year of the concern of the persons employed on a full-time, part-time or temporary basis during each of the pay periods of the fiscal year, and (2) concerns are affiliates of each other when either, directly or indirectly, one concern controls or has the power to control the other, or a third party or parties controls or has the power to control both.

I hereby declare that rights under contract or law have been conveyed to, and remain with, the small business concern identified above, with regard to the invention described in

- the specification filed herewith, with title as listed above.  
 the application identified above.  
 the patent identified above.

If the rights held by the above-identified small business concern are not exclusive, each individual, concern or organization having rights in the invention is listed below\* and no rights to the invention are held by any person, other than the inventor(s), who would not qualify as an independent inventor under 37 C.F.R. § 1.9(c), if the person made the invention, or by any concern which would not qualify as a small business concern under 37 C.F.R. § 1.9(d) or a nonprofit organization under 37 C.F.R. § 1.9(e).

\*NOTE: Separate verified statements are required from each named person, concern or organization having rights to the invention averring to their status as small entities (37 C.F.R. § 1.27)

Each such person, concern or organization having any rights in the invention is listed below:

- No such person, concern, or organization exists.  
 Each such person, concern or organization is listed below:

Name: (N/A)

Address:

Individual                    Small Business Concern                    Nonprofit Organization

Name: (N/A)

Address:

Individual                    Small Business Concern                    Nonprofit Organization

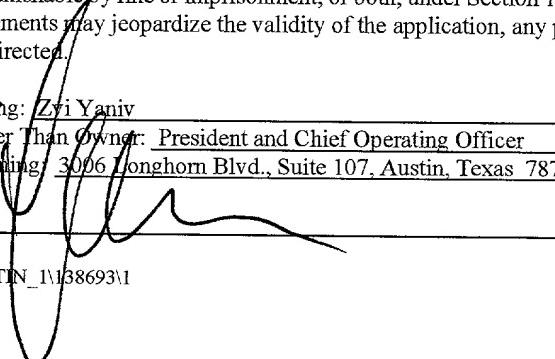
I acknowledge the duty to file, in this application or patent, notification of any change in status resulting in loss of entitlement to small entity status prior to paying, or at the time of paying, the earliest of the issue fee or any maintenance fee due after the date on which status as a small entity is no longer appropriate. (37 C.F.R. § 1.28(b)).

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further, that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application, any patent issuing thereon, or any patent to which this verified statement is directed.

Name of Person Signing: Zvi Yaniv

Title of Person, if Other Than Owner: President and Chief Operating Officer

Address of Person Signing: 3006 Longhorn Blvd., Suite 107, Austin, Texas 78758

SIGNATURE: 

Date: 6/20/00

**SYSTEM AND METHOD FOR SELLING  
ADVERTISING SPACE ON ELECTRONIC BILLBOARDS  
OVER THE INTERNET**

Inventors:     Marc Eller  
                 Dr. Zvi Yaniv

## CROSS REFERENCE TO RELATED APPLICATIONS

The present Application claims priority to both of the following U.S. provisional Patent Applications:

5 Serial No. 60/130,602, filed April 22, 1999, entitled "System and Method for Selling Advertising Space on Electronic Billboards over the Internet"; and

Serial No. 60/147,673, filed August 6, 1999, entitled "System and Method for Selling Advertising Space on Electronic Billboards over the Internet."

## TECHNICAL FIELD

The present invention relates in general to computer networks, and in particular, to performing e-commerce transactions over the Internet.

## BACKGROUND INFORMATION

Electronic billboards are poised to transform the billboard industry by permitting multiple ads to be displayed on an electronic billboard at any desired time and frequency. Moreover, the transportation of the ads to a particular billboard can be made using any type of electronic means, including wireless transmission.

## SUMMARY OF THE INVENTION

The present invention permits a user to access the billboard provider's website to order and upload a desired ad to a particular billboard anywhere within the world.

More specifically, an advertiser can upload advertising data to a server operating a particular billboard via a remote computer. Once approved for content, the advertising data can then be transmitted to the billboard for display at a time and duration selected by the advertiser.

The billboard to display the advertising information can be located indoors or outdoors.

Though the present invention is described with respect to the display of advertisements, any information, including video and still images can be uploaded and displayed on the indoor or outdoor billboards in accordance with the present invention.

The foregoing has outlined rather broadly the features and technical advantages of the present invention in order that the detailed description of the invention that follows may be better understood. Additional features and advantages of the invention will be described hereinafter which form the subject of the claims of the invention.

## BRIEF DESCRIPTION OF THE DRAWINGS

For a more complete understanding of the present invention, and the advantages thereof, reference is now made to the following descriptions taken in conjunction with the accompanying drawings, in which:

5 FIGURE 1 illustrates an example of billboard locations within the continental United States;

FIGURE 2 illustrates an electronic billboard;

10 FIGURE 3 illustrates a flowchart configured in accordance with the present invention;

FIGURE 4 illustrates a process for enabling a viewer of a billboard to receive other information about products advertised on that particular billboard; and

15 FIGURE 5 illustrates an architecture for transmitting data to and from various billboards.

## DETAILED DESCRIPTION

In the following description, numerous specific details are set forth to provide a thorough understanding of the present invention. However, it will be obvious to those skilled in the art that the present invention may be practiced without such specific details. In other instances, well-known circuits have been shown in block diagram form in order not to obscure the present invention in unnecessary detail. For the most part, details concerning timing considerations and the like have been omitted in as much as such details are not necessary to obtain a complete understanding of the present invention and are within the skills of persons of ordinary skill in the relevant art.

Refer now to the drawings wherein depicted elements are not necessarily shown to scale and wherein like or similar elements are designated by the same reference numeral through the several views.

Outdoor billboards are located throughout the United States and even worldwide. Traditionally, billboards have been of the paper/poster type, where the ad on the billboard must be manually changed on a periodic basis using one or more workers. As a result, for a definitive period of time, usually one month or longer, only a single ad can be displayed on any particular billboard.

Indoor billboards are also gaining a foothold by displaying on the inside walls, or other locations, information about products and special sales within the

store. Again, the problem with such traditional posters and indoor billboards is that they must be manually changed, thus limiting their versatility and effectiveness.

Electronic billboards, such as the ones illustrated in FIGURES 2A and 2B, have the capability of displaying still or video images in a manner similar to a television or a computer display. FIGURE 2A illustrates an outdoor billboard 201 having an electronic display 200 configured in accordance with one embodiment of the present invention. FIGURE 2B illustrates an indoor electronic billboard 203 for displaying advertising information, or any other information, on a wall 202 of the inside of the store. A processor and memory device, along with driver electronics and software are located at the electronic billboard site. The images to be displayed can be stored within the memory, and then are displayed in a desired manner using software. For example, a multitude of different ads can be displayed at different and preselected frequencies and durations of time. The ads can be uploaded to the billboard system through a direct connection locally, or remotely using landlines, cable, satellite signaling, fiber optic cable, wireless transmissions, etc. As a result, a central location can upload various ads to various billboards located across the United States (FIGURE 1 illustrates an example of electronic billboards, noted by X's, throughout the United States), or even worldwide. Alternatively, any one or more of the billboards noted by the exemplary locations on FIGURE 1 could be indoor billboards as described above.

The further advantage of the present invention is that it permits a client who wishes to purchase ad space on a particular electronic billboard to do so completely, or almost completely, without the intervention by the billboard provider.

Alternatively, a company utilizing indoor, or outdoor, billboards at store locations in various geographic areas, could upload any desired information to any selected billboard remotely. For example, if a particular company decided to run a Labor Day sale, it could merely upload an ad describing such sale to selected billboards at selected stores throughout the world.

Referring to FIGURE 3, a client who wishes to display their ad on a particular billboard somewhere within the world will log on to a network, such as the Internet or the Internet 2, and visit the website operated by the billboard provider. In step 302, the client may view a map of the United States, any other country, or even the entire world with indications where the billboard provider's electronic billboards are located. Using a zoom feature, the client may zoom in on a particular location, such as New York City, to pinpoint the location of the electronic billboard, down to the precise city block. Furthermore, the client may view a photo of the billboard showing the billboard height, width, the direction the billboard is facing, etc. Alternatively, even an image of an indoor billboard can be displayed to the client.

In step 303, the client will select a billboard. In step 304, a list of open times and their durations available for ad space at the selected billboard is provided to the client. The client, in step 305, can then select an available time slot and duration.

Upon selection of the available time slot and duration, the cost for the ad space may be provided to the client in those instances where a fee is applicable. Such ad fee may be dependent on several factors, including the time of day during which the ad will be displayed.

5            In step 306, the client will purchase the desired amount of time (if applicable). Such a purchase could be made with a credit card, or the clients may already have an account set up with the billboard provider. Alternatively, a password could be required to be entered before being able to upload any software to the billboard.

10            In step 307, the client proceeds to prepare their own ad (or other information to be displayed) for display. As an alternative, the client may already have an ad, which the client may upload to the billboard provider. If the client needs to prepare an ad, it may do so using prepackaged software, such as PowerPoint™, or a software package may be downloaded from the billboard provider, which enables the client to create an ad. Once the ad is created, then the client may upload the created ad to a central location for approval by the billboard provider in step 308. It is contemplated that such an approval will be required so that the billboard provider can ensure that the displayed ad conforms to the local laws where the billboard is located.

15            Nevertheless, certain pre-approved clients may be able to skip step 308 and upload their ad directly to the billboard system.

20            In step 309, once approved, the ad is scheduled by the billboard provider for download to the selected billboard system for display at the desired time and duration.

Furthermore, a software key may be used by the billboard provider to ensure that only their own secure transmissions are sent to the billboards.

Referring to FIGURE 4, electronic billboards, such as electronic billboard 401 can be located anywhere within the world. In addition, each billboard may have its own website associated with it, wherein the website will be supported by server 405. Server 405 will maintain the web page for billboard 401, and will be accessible by a user over the Internet 403 by going to [www.billboard401.com](http://www.billboard401.com). In the process described above with respect to FIGURE 3, an option may be given to the advertiser to provide further information regarding the ad to be displayed on billboard 401. Such additional information may include details about the product advertised, links to other web sites, etc. If the advertiser uploads such information, the [ebillboard.net](http://ebillboard.net) server 402 will then subsequently download that information to [billboard401.com](http://billboard401.com). Subsequently, when an individual views that particular advertisement on billboard 401, somewhere on billboard 401 there will be a message that further information regarding products shown on the billboard 401 can be found at [billboard401.com](http://billboard401.com). This message could be displayed by the electronic billboard, or could merely be printed on the border of billboard 401. Then, when the person gets to their computer 404, and they access [billboard401.com](http://billboard401.com), they will be able to view the additional information provided by the advertiser. The foregoing will be performed for each individual billboard throughout the entire world, wherein each such billboard will have its own web page.

Each billboard could also broadcast, on particular wireless frequencies to passers by, information about the billboard or its ads, in a manner similar to the way airport information is broadcast to car radios when cars near an airport.

Referring to FIGURE 5, one of the issues regarding implementation of electronic billboards is the transmission of the data to and from the billboards in a wireless mode. Although cellular, satellite, fiber and cable technologies can perform this function, another viable transmission medium is radio frequency (RF) waves. By using voice mobile channels, for example, which cover distances up to 15 miles, the system would be able to digitally repeat data messages for other data links and at the same time provide data input/output services at a node (billboard). A path could include up to several repeaters. As a result, the system could easily cover 120-150 miles from a source location, which is connected by telephone, cellular modem, satellite, etc. to a central control center. Such a central control center 501 may house the e billboard.net server 402. The link to the main link 502 in one city (e.g., Los Angeles) could be made by any type of telecommunications means, as described above. Likewise, the connection between control center 501 and the main link 506 (e.g., New York) could also be made by any type of telecommunications link. Each main link will then have a wireless connection to a first repeater node 503, 507, which are then connected by a wireless connection to the next repeater node 504, 508, which could then be coupled to the next repeater node 505, 509 by another wireless connection. Each of these nodes involves a wireless repeater, and may be located at

the various billboard sites within the particular locale. As a result, a main link can communicate with all the billboards within an area by wireless RF communications.

Although the present invention and its advantages have been described in detail, it should be understood that various changes, substitutions and alterations can be made herein without departing from the spirit and scope of the invention as defined by the appended claims.

## WHAT IS CLAIMED:

- 1        1. A display system comprising:  
2              an electronic billboard having an electronic display;  
3              an information handling system coupled to the electronic display and operable  
4              for controlling what is displayed on the electronic display;  
5              a network coupled to the information handling system; and  
6              a computer remotely located relative to the information handling system and  
7              coupled to the information handling system via the network, the computer operable  
8              for receiving input for sending information over the network to the information  
9              handling system for display on the electronic display of the electronic billboard.
- 1        2. The display system as recited in claim 1, wherein the electronic billboard is  
2              located so that it can be viewed by a plurality of people.
- 1        3. The display system as recited in claim 2, wherein the electronic billboard is an  
2              outdoor billboard.
- 1        4. The display system as recited in claim 2, wherein the electronic billboard is an  
2              indoor billboard.

1       5. The display system as recited in claim 1, wherein the network is an open  
2       network.

1       6. The display system as recited in claim 1, wherein the network is the Internet.

1       7. The display system as recited in claim 1, further comprising:  
2            a second electronic billboard having a second electronic display;  
3            a second information handling system coupled to the second electronic display  
4       and operable for controlling what is displayed on the second electronic display,  
5       wherein the network is also coupled to the second information handling system so  
6       that the computer can upload information to be displayed to either or both of the  
7       electronic billboards.

1           8. A method for displaying information on an electronic billboard, comprising  
2       the steps of:

3                 creating the information;  
4                 uploading the information to a first information handling system from a  
5       second information handling system over a network; and  
6                 controlling a display of the information on the electronic billboard by the  
7       second information handling system.

1           9. The method as recited in claim 8, wherein the network is an open network.

1           10. The method as recited in claim 8, wherein the network is the Internet.

1           11. The method as recited in claim 10, wherein the electronic billboard is mounted  
2       for outdoor display of the information.

1           12. The method as recited in claim 10, wherein the electronic billboard is mounted  
2       for indoor display of the information.

1           13. The method as recited in claim 8, further comprising the step of mounting the  
2       electronic display for public viewing of the information to be displayed.

3           14. A method for displaying information on an electronic billboard, comprising  
4 the steps of:

5                 providing a first electronic billboard at a first location;  
6                 coupling a first information handling system to the first electronic billboard so  
7                 that the first information handling system can control information to be displayed on  
8                 the first electronic billboard;

9                 providing a second electronic billboard at a second location;  
10                 coupling a second information handling system to the second electronic  
11                 billboard so that the second information handling system can control information to  
12                 be displayed on the second electronic billboard;

13                 coupling the first and second information handling systems to a third  
14                 information handling system over the Internet;

15                 selecting, via the third information handling system, which of the first and  
16                 second electronic billboards will display the information;

17                 uploading the information from the third information handling system over the  
18                 Internet to the information handling system controlling the selected electronic  
19                 billboard; and

20                 displaying the information on the selected electronic billboard.

1       15. The method as recited in claim 14, further comprising the steps of:  
2           selecting, via the third information handling system, a time period for  
3           displaying the information on the selected electronic billboard; and  
4           displaying the information on the selected electronic billboard during the  
5           selected time period.

1       16. The method as recited in claim 14, wherein the selected electronic billboard is  
2           selected from a list of available electronic billboards which includes the first and  
3           second electronic billboards.

1       17. The method as recited in claim 16, wherein the list includes a map of the first  
2           and second locations.

1       18. The method as recited in claim 16, further comprising the step of:  
2           charging an amount of money for the display of the information on the  
3           selected electronic billboard.

- 1        19. A system for displaying information on an electronic billboard, comprising:
- 2              means for providing a first electronic billboard at a first location;
- 3              means for coupling a first information handling system to the first electronic
- 4              billboard so that the first information handling system can control information to be
- 5              displayed on the first electronic billboard;
- 6              means for providing a second electronic billboard at a second location;
- 7              means for coupling a second information handling system to the second
- 8              electronic billboard so that the second information handling system can control
- 9              information to be displayed on the second electronic billboard;
- 10             means for coupling the first and second information handling systems to a
- 11             third information handling system over the Internet;
- 12             means for selecting, via the third information handling system, which of the
- 13             first and second electronic billboards will display the information;
- 14             means for uploading the information from the third information handling
- 15             system over the Internet to the information handling system controlling the selected
- 16             electronic billboard; and
- 17             means for displaying the information on the selected electronic billboard.

- 1       20. The system as recited in claim 19, further comprising:  
2           means for selecting, via the third information handling system, a time period  
3           for displaying the information on the selected electronic billboard; and  
4           means for displaying the information on the selected electronic billboard  
5           during the selected time period.
- 1       21. The system as recited in claim 19, wherein the selected electronic billboard is  
2           selected from a list of available electronic billboards which includes the first and  
3           second electronic billboards.
- 1       22. The system as recited in claim 21, wherein the list includes a map of the first  
2           and second locations.
- 1       23. The system as recited in claim 21, further comprising:  
2           means for charging an amount of money for the display of the information on  
3           the selected electronic billboard.

1           24. A method of advertising, comprising the steps of:  
2                 uploading advertising data to an ebillboard.net server via a remote computer  
3                 by an advertiser;  
4                 uploading additional information concerning the advertiser via the remote  
5                 computer by the advertiser at the advertiser's option;  
6                 transmitting the advertising data from the ebillboard.net server to a selected  
7                 billboard;  
8                 transmitting the optional additional information concerning the advertiser  
9                 from the ebillboard.net server to a web site dedicated to the selected billboard;  
10                 displaying on the selected billboard the advertising information at a selected  
11                 time.

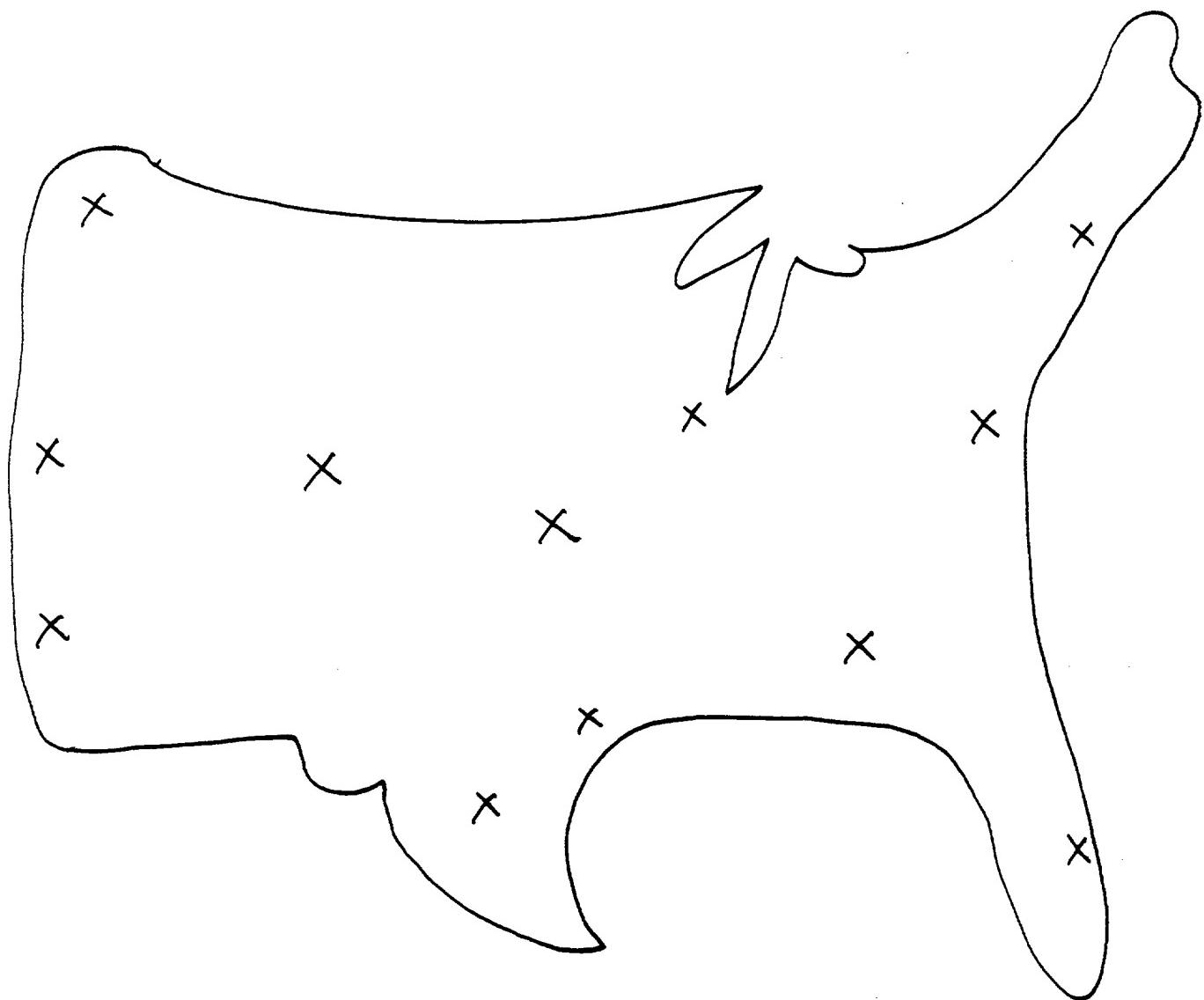
1           25. The method as recited in claim 24, wherein a consumer viewing the selected  
2                 billboard is informed of the availability of additional information concerning the  
3                 advertiser at the web site dedicated to the selected billboard.

1           26. The method as recited in claim 25, wherein the consumer viewing the selected  
2                 billboard accesses the additional information concerning the advertiser through the  
3                 web site dedicated to the selected billboard.

**SYSTEM AND METHOD FOR SELLING  
ADVERTISING SPACE ON ELECTRONIC BILLBOARDS  
OVER THE INTERNET**

**ABSTRACT**

Electronic billboards, which may be indoor or outdoor are located in various geographical areas. Associated with each billboard is a web address. A client desiring to display information, such as an advertisement, on any selected electronic billboard can upload the information over the Internet to the server implementing the billboard website. The client can select the time and duration for the information to be displayed, and can even purchase the display time using a credit card or through the use of some other type of account.



F16.1

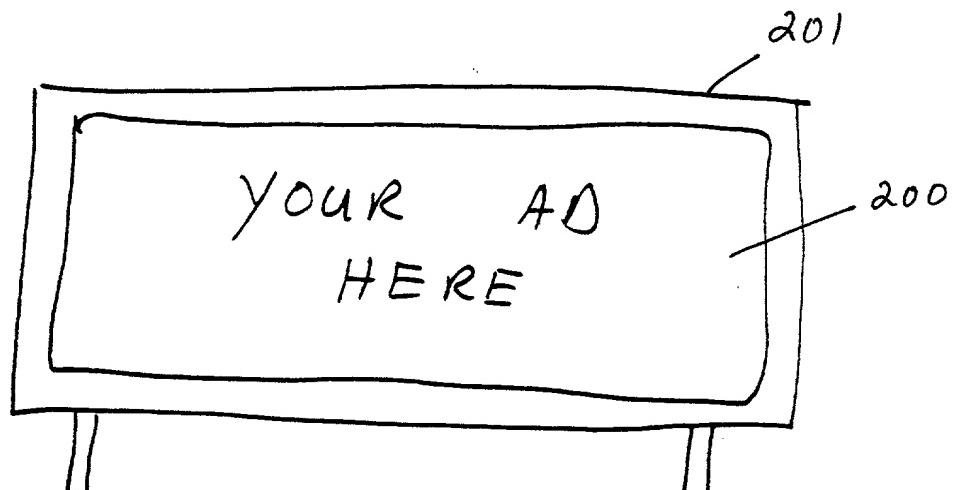


FIG. 2A

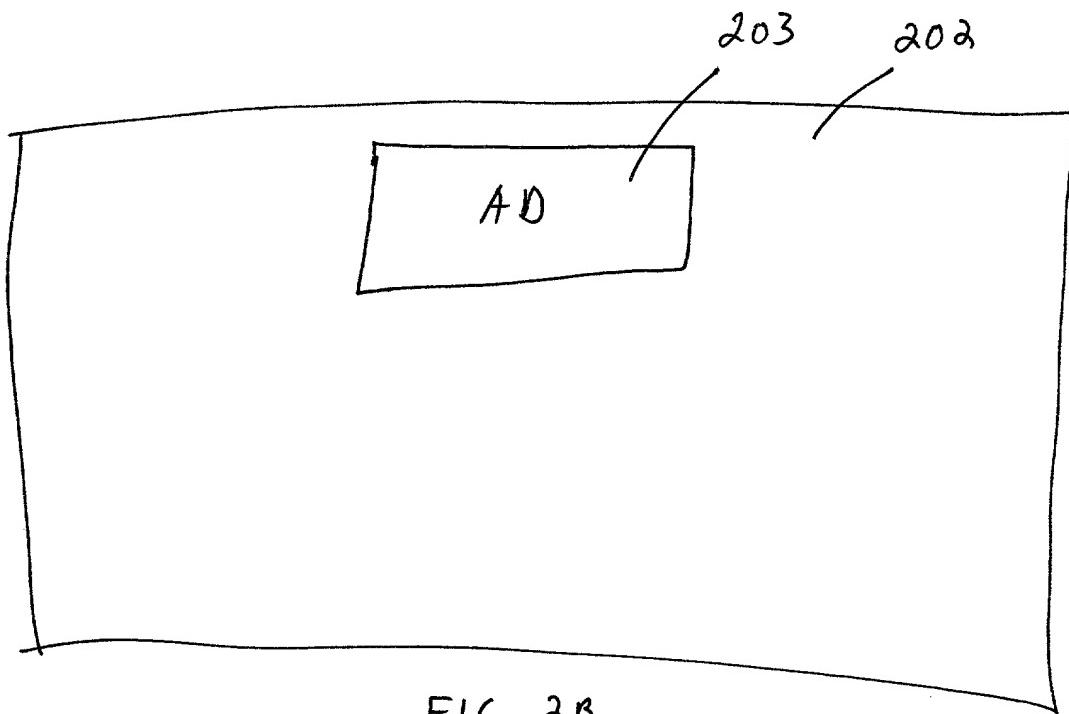
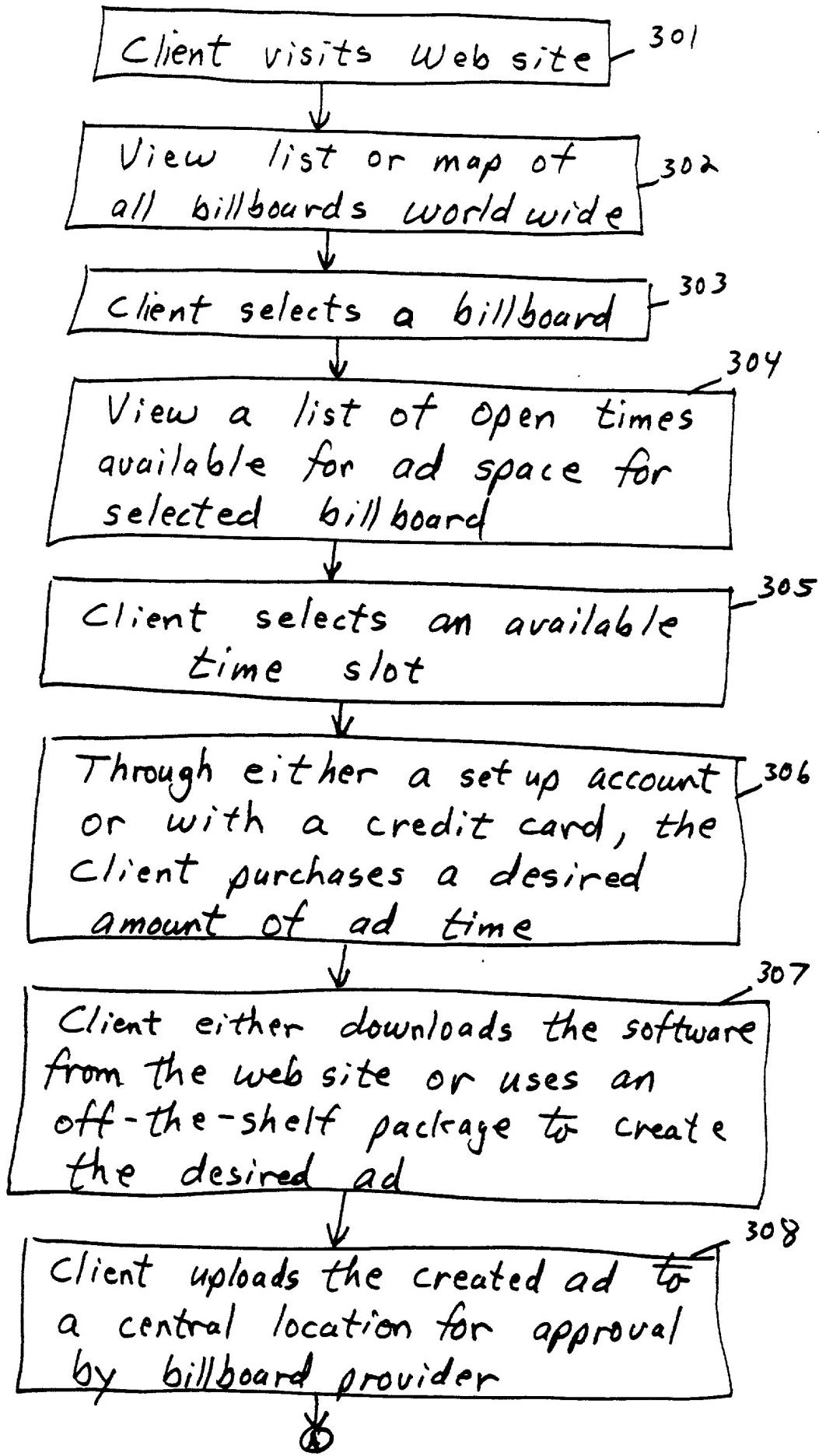


FIG. 2B



(A)  
↓

Once approved, the ad is  
scheduled for download to  
selected billboard

- 309

FIG. 3

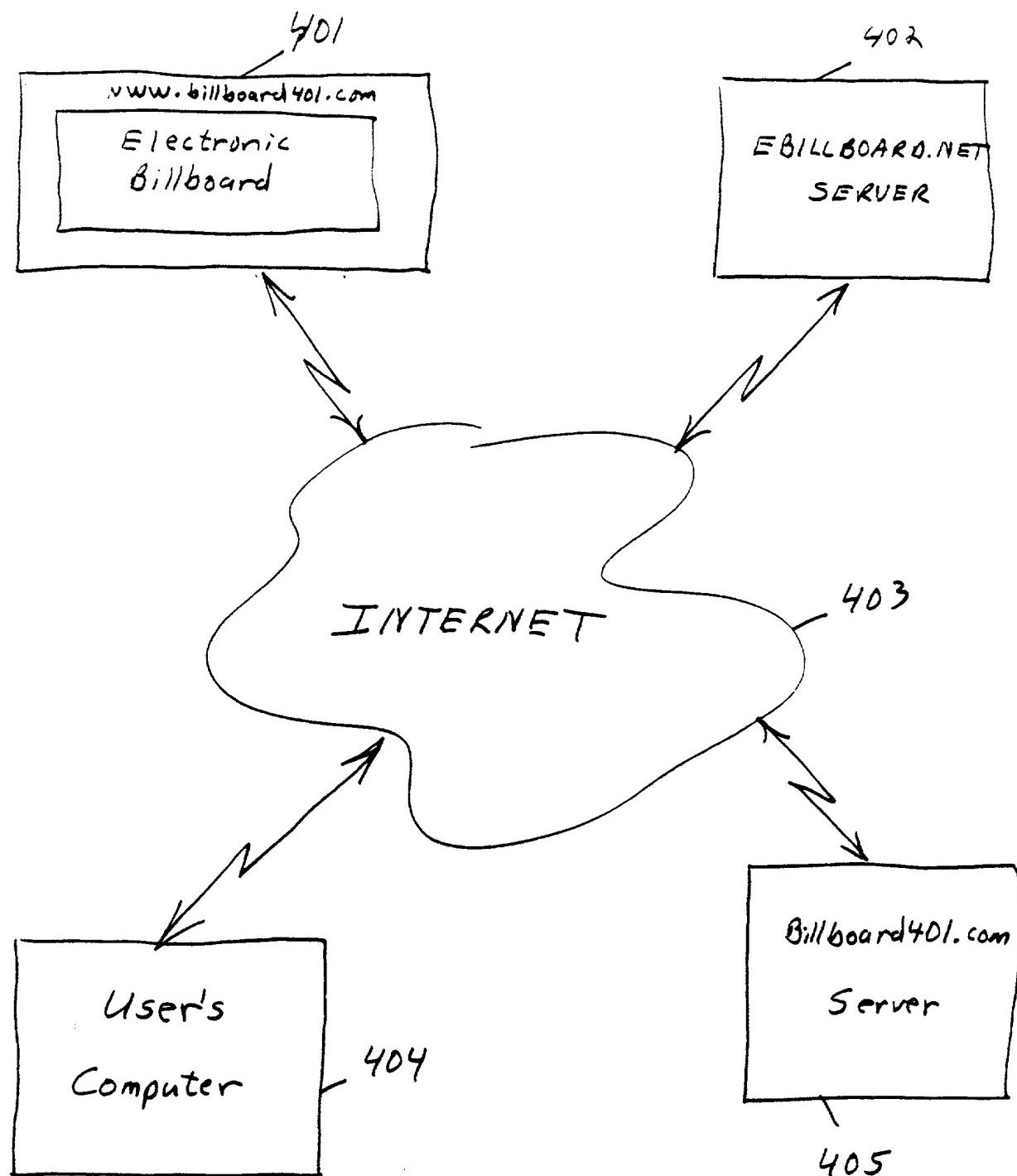


FIG. 4

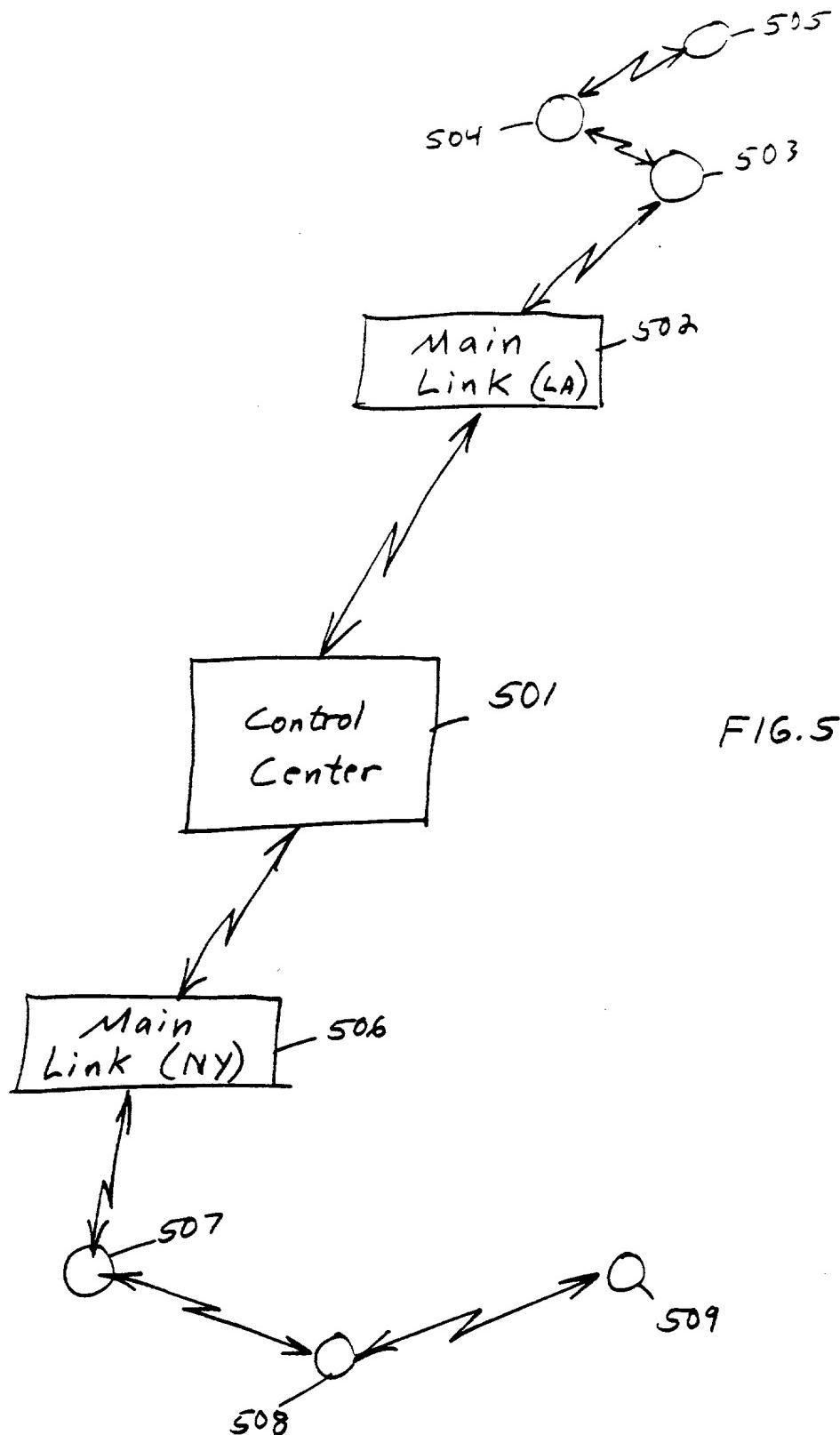


FIG.5

**DECLARATION AND POWER OF ATTORNEY FOR  
PATENT APPLICATION**

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name;

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled

**SYSTEM AND METHOD FOR SELLING  
ADVERTISING SPACE ON ELECTRONIC BILLBOARDS  
OVER THE INTERNET**

the specification of which (check one)

- is attached hereto.
- was filed on \_\_\_\_\_  
as Application Serial No. \_\_\_\_\_  
and was amended on \_\_\_\_\_

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the patentability of this application in accordance with Title 37, Code of Federal Regulations, §1.56.

I hereby claim foreign priority benefits under Title 35, United States Code, §119 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

Prior Foreign Application(s): Priority Claimed

<u>(Number)</u>	<u>(Country)</u>	<u>(Day/Month/Year)</u>	<input type="checkbox"/> Yes	<input type="checkbox"/> No
-----------------	------------------	-------------------------	------------------------------	-----------------------------

I hereby claim the benefit under Title 35, United States Code, §120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, §112, I acknowledge the duty to disclose information material to the patentability of this application as defined in Title 37, Code of Federal Regulations, §1.56 which occurred between the filing date of the prior application and the national or PCT international filing date of this application:

<u>60/130,602</u> (Application Serial #)	<u>04/22/99</u> (Filing Date)	<u>Provisional</u> (Status)
<u>60/147,673</u> (Application Serial #)	<u>08/06/99</u> (Filing Date)	<u>Provisional</u> (Status)

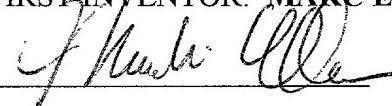
I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

POWER OF ATTORNEY: As a named inventor, I hereby appoint the following attorneys and/or agents to prosecute this application and transact all business in the Patent and Trademark Office connected therewith:

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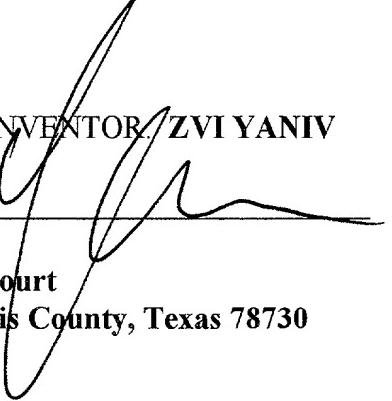
INVENTOR'S SIGNATURE:  DATE: 4/19/00

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